5-15-1970

Vessel and Barrier Designs Used to Collect Oil from the Sea

Charles J. Kessen
Indiana University - Purdue University Fort Wayne

VESSEL AND BARRIER DESIGNS USED TO COLLECT OIL FROM THE SEA.

Prepared by: Charles J. Kessen

Prepared for: Prof. Worthley

Class: MET 497

Date: May 15, 1970.

TABLE OF CONTENTS

	Page
LIST OF ILLUSTRATIONS	IV
ABSTRACT	v
PREFACE	vi
DEFINING THE PROBLEM	1
INFLATED BARRIER DESIGN	2
FOAM BARRIER DESIGN	6
VESSEL DESIGN	9

APPENDIXES

A. Volume of foam required per min..... 13

Graph-Volume of foam required vs the velocity of the vessel.

B. Drawings of the equipment to produce the foam barrier..... 16

C. Calculations for the capacity of the storage tanks, the weight of the vessel, and also the draft.
Drawing of the vessel..... 17

LIST OF ILLUSTRATIONS

FIGURES Page

1. Common Sence fastner..... 3

2. Lift the Dot fastner..... 3

3. Cross section of inflated barrier... 4

4. Diagram of inflated barrier..... 5

5. Sealing apparatus to form a plastic bag..... 8

6. Cross section of foam barrier..... 9

7. Returning the barrier 10

ABSTRACT

This report deals with the design of a barrier and a vessel to be used in cleaning an oil slick from the ocean surface. It presents the analysis, of an inflated barrier and also one made from a foam material, not only of its manufacturing process but how they would be employed.

The design of the vessel takes into account the housing and various components required to do the job only. It does not take into consideration the design of any of the super structure.